AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Previously Presented) A method of optimizing the performance of a mobile radio system multicarrier transmitter using processing operations comprising discrete Fourier transform (DFT) computation, carriers shaping and/or filtering in the frequency domain, inverse discrete Fourier transform (IDFT) computation, overlapping of processed sample blocks, and an oversampling factor related to a ratio between an input sampling frequency and an output sampling frequency, wherein, for each carrier, the input sampling frequency corresponds to a modulation rate of the input signal, and a length LDFT of the DFT and a length LIDFT of the IDFT are chosen in such a manner as to enable said oversampling ratio to be satisfied and to enable said filtering.

2. (Previously Presented) A method according to claim 1, wherein, if a ratio LIDFT/LDFT is not an integer, the denominator of LIDFT/LDFT when simplified is chosen to be as small as possible, to provide the finest possible choice of a length L of the blocks of samples with no overlap at an input of the DFT, and therefore the finest possible choice of percentage overlap.

3. (Previously Presented) The method according to claim 2, wherein, the input sampling frequency is equal to 3.84 MHz, a required value of the output sampling frequency is

approximately 80 MHz, a required value of a frequency resolution is approximately 80 kHz, LDFT is chosen to be equal to 48 and LIDFT is chosen to be equal to 1024.

4. (Previously Presented) The method according to claim 1, wherein, if the ratio LDFT/LIDFT is an integer, the lengths LDFT and LIDFT are chosen in such a manner as to provide the finest possible choice of the oversampling factor or the output sampling frequency.

5. (Previously Presented) The method according to claim 4, wherein, the input sampling frequency being equal to 3.84 MHz, a required value of the output sampling frequency is approximately 80 MHz, and a required value of a frequency resolution is approximately 80 kHz, LDFT is chosen to be equal to 45 and LIDFT is chosen to be equal to 1260.

6. (Previously Presented) A method according to claim 1, wherein, before effecting said DFT computation, a frequency shift DF is applied in the time domain equal to an algebraic difference between a required central frequency of a corresponding filtered signal and a closest frequency sample coming from said DFT computation.

7. (Previously Presented) A method according to claim 1, wherein, before effecting said DFT computation, to compensate phase jumps between samples at an output of the IDFT, a complex multiplication is effected of input samples by a complex of unit modulus and opposite phase to the phase jump to be compensated.

8. (Previously Presented) A method according to claim 7, wherein the phase jump to be compensated being periodic and predictable by a function L/LDFT, said complex is expressed in a form:

decp = exp(2*j*pi*numc/LDFT*L*(NUMT-1)),

where:

NUMT is a relative chronological number of slices or blocks of L samples, and numc is an IDFT channel number corresponding to a central frequency of the carrier concerned or to a ratio Fc/Fs modulo LIDFT (Fc is a required carrier frequency).

9. (Previously Presented) A method of optimizing the performance of a mobile radio system transmitter using processing operations including discrete Fourier transform (DFT) computation, filtering in the frequency domain, inverse discrete Fourier transform (IDFT) computation, and overlapping of processed sample series or blocks, said overlapping being obtained by adding LDFT - L zeros to blocks of L incident signal samples to obtain blocks of LDFT samples to be applied to a DFT of length LDFT, and wherein the LDFT samples of said blocks are rotated in such manner that the LDFT - L zeros are placed as close as possible to a center of the blocks and the L signal samples are placed on either side of the LDFT - L zeros.

10. (Original) A method according to claim 9, wherein said blocks are rotated in such a manner that the LDFT - L zeros are placed as close as possible to the center of the blocks, to within one sample if L is odd.

11. (Currently Amended) A mobile radio system transmitter ~~comprising means for performing processing operations~~ comprising: means for performing discrete Fourier transform (DFT) computation, means for performing at least one of carriers shaping ~~and/or~~and filtering in the frequency domain, means for performing inverse discrete Fourier transform (IDFT) computation, and means for performing overlapping of processed sample blocks, ~~and~~with an oversampling factor related to a ratio between an input sampling frequency and an output sampling frequency, wherein, for each carrier, the input sampling frequency corresponds to a modulation rate of an input signal, and a length LDFT of the DFT and a length LIDFT of the IDFT are chosen in such a manner as to enable said oversampling ratio to be satisfied and to enable said filtering.

12. (Currently Amended) A mobile radio system ~~actransmitter comprising:ording~~transmitter according to claim 11, further comprising

means for, before effecting said DFT computation, applying in the time domain a frequency shift DF equal to an algebraic difference between a required central frequency of a corresponding filtered signal and a closest frequency sample coming from said DFT computation.

13. (Previously Presented) A mobile radio system transmitter according to claim 11, further comprising:

means for, before effecting said DFT computation, compensating phase jumps between samples at an output of the IDFT, effecting a complex multiplication of input samples by a complex of unit modulus and opposite phase to the phase jump to be compensated.

14. (Previously Presented) A mobile radio system transmitter comprising:

means for performing processing operations comprising discrete Fourier transform (DFT) computation, filtering in the frequency domain, inverse discrete Fourier transform (IDFT) computation, and overlapping of processed sample series or blocks, said overlapping being obtained by adding LDFT - L zeros to blocks of L incident signal samples to obtain blocks of LDFT samples to be applied to a DFT of length LDFT, and

means for rotating the LDFT samples of said blocks in such manner that the LDFT - L zeros are placed as close as possible to a center of the blocks and the L signal samples are placed on either side of the LDFT - L zeros.